REMARKS

Very thanks for Examination's suggestion and thanks for finding some citations about the present invention, thereby, the applicant may know more information about the invention. This case has been carefully reviewed and analyzed in view of the office action. All details of the reference prior arts are fully considered and compared with the present invention.

ABOUT THE REJECTION SPECIFICATION

Responsive to the objections and rejections made of the Examiner in office action. We have amended the specification, claims and abstracts. All the errors disclosed in that office action has been corrected according to the Examiner's indications disclosed in the official action.

ABOUT CLAIM REJECTION OF 35USC103

Indeed the citations disclose some features of the present invention, and the applicant agrees with these viewpoints, however applicant discovers that some main features of the present invention are not disclosed in the citation which can form the novelty and inventive step of the present invention.

To illustrate the novelty of the present invention and overcome the objection from the citations, the applicant decides to amend claims 1 to 4 as the following. The suggestions in the office action have been amended in this office action and some other features in Fig. 2 of the present invention are added to the amended claim 1. Thereby, it is assured that the new claims are based on the original claim and drawing and thus no new matter is added. The relation of the new claims with respect to the original claims are shown in the following.

Claim 1. (Currently Amended) A padlock comprising:

an upper ~~fundamental~~ base 2 formed with a recessed chamber 20 in an ~~the~~ interior and with a cut surface 21 defining said recessed chamber 20, said cut surface 21 provided with a movable-bolt insert hole 22 at a right end of the upper base 2, said upper ~~fundamental~~ base 2 further bored with a stationary-bolt insert hole 24 at a left end of the upper base 2;

a lower ~~fundamental~~ base 3 combined with said upper ~~fundamental~~ base 2 and formed with a cut surface 30 on an ~~the~~ inner side, said cut surface bored with an insert hole 31, said lower ~~fundamental~~ base provided with a lock core accommodating chamber 32 in the center and further bored with a through hole 33 communicating with said lock core accommodating chamber 32;

a lock core 4 received in said lock core accommodating chamber 32 of said lower ~~fundamental~~ base 3, said lock core 4 having one end provide with a rotary member 40 and the other end bored with a keyhole 41;

a stop block 5 received in said recessed chamber 20 of said upper ~~fundamental~~ base 2, said stop block 5 bored with an insert hole 50 in a ~~the~~ center thereof and having an ~~its~~ right end formed with an engage groove ~~grove~~ 52, a spring 53 having an ~~its~~ lower end fitted on said right end of said stop block, said spring 53 having an ~~its~~ upper end fitted on said upper ~~fundamental~~ base; wherein the engage groove 52 is extended to the right side of the movable-bolt insert hole 22 so that the engage groove 52 at the right side of the stop block 5 can enclose and buckle the movable bolt 7 as the movable bolt 7 is inserted into the movable-bolt insert hole 22;

a stationary bolt 6 inserted in said stationary;-bolt insert hole 24 of said upper ~~fundamental~~ base 2, said stationary bolt 6

provided with an annular groove 60 and an axial insert hole 61;

a movable bolt 7 inserted in said movable-bolt insert hole 22 of said upper ~~fundamental~~ base 2 and said insert hole 31 of said lower ~~fundamental~~ base 3, said movable bolt provided with an annular groove 70 and an axial insert hole 71; wherein since said engage groove 52 is extended to the right side of the movable-bolt insert hole 22 so that the engage groove 52 at the right side of the stop block 5 can enclose and buckle the movable bolt 7 as the movable bolt 7 is inserted into the movable-bolt insert hole 22;

an upper shell 8 covered on the exterior of said upper ~~fundamental~~ base 2 and provided with a stationary-bolt threading hole 80 and a movable-bolt threading hole 81; and,

a lower shell 9 covered on the exterior of said lower ~~fundamental~~ base 3 and combined with said upper shell 8, said lower shell bored with a through hole in the center.

Claim 2. (Currently Amended) The padlock as claimed in Claim 1, wherein said upper ~~fundamental~~ base 2 is bored with a pin hole 25 in one side wall for a fixing pin to be inserted therethrough to fix said stationary bolt in position.

Claim 3. (Currently Amended) The padlock as claimed in Claim 1, wherein said upper ~~fundamental~~ base 2 is provided with plural positioning studs inside, and said lower ~~fundamental~~ base is bored with plural stud holes for said positioning studs of said upper ~~fundamental~~ base to respectively fit therein so as to combine said upper and said lower ~~fundamental~~ base together.

Claim 4. (Currently Amended) The padlock as claimed in Claim 1, wherein said cut surface of said upper ~~fundamental~~ base is provided with a horizontal projecting stud for hooking the upper end

of said spring, and said stop block is provided with a horizontal projecting stud at the right end for hooking the lower end of said spring.

(A) For the citation USP 3,422,644

In the present invention, the spring 53 is at a right side of the stop block 5. That is, the spring 53 and the movable blot 7 are at the same side of the stop block 5. See Fig. 5, the stop block 5 and the spring 53 encloses the movable bolt 7. When the lock core 4 rotates, the spring 53 can be extended so as to release the movable bolt 7. In the citation '644, the spring 24 and the movable blot 11' are at opposite sides of the stop block 25. The spring 24 dose not enclose the movable bolt 7. Thereby from this viewpoint, the present invention is different from the citation.

(B) For the citation USP 1,908,582

The citation '644 does not teach to use a pin (26 in the present invention) to fix the stationary shackle (6 in the present invention). The office action cites the USP1,908,582 to object this feature of the present invention.

However as we referring to the Fig. 4 of the citation '582, we do not find any pin to be used to fix the station shackle 11. Referring to Fig. 1 fo the citation '582, it is illustrated that the stationary shackle 11 is rotatable, and thus it seams that the shackle 11 can not be fixed by a pin.

Furthermore, in the citation '582, the spring 16 is at the opposite side of the stop block 5. This is not like that of the present invention.

(C) For the citation USP 3,254,516

The citation '516 has upper and lower shells 32, 38 and the insert holes 34, 36 which are similar to those of the present invention.

However other structure of the citation '516 is very different from the present invention. Especially, in the present invention, In the present invention, the spring 53 is at a right side of the stop block 5. That is, the spring 53 and the movable blot 7 are at the same side of the stop block 5. See Fig. 5, the stop block 5 and the spring 53 encloses the movable bolt 7.

In the citation '516, see Fig. 2 of the present invention, no spring and stop block encloses the movable bolt. The structure of the citation '516 is very different from that of the present invention.

(D) For the combinations of the citations

From above discussion, it is known that the combination of all the citations, including **USP 3,422,644, USP 1,908,582, and USP 3,254,516** cannot have the feature of:

(1) the spring 53 is at a right side of the stop block 5. That is, the spring 53 and the movable blot 7 are at the same side of the stop block 5. See Fig. 5, the stop block 5 and the spring 53 encloses the movable bolt 7. When the lock core 4 rotates, the spring 53 can be extended so as to relcase the movable bolt 7.

(2) A pin 26 serves to fix the stationary shackle 6.

Although some other features can be seen in the other citations, from the office action, it is known that the present invention combines the features in various citation so as to form a powerful lock device, which cannot be achieved by any of the citations. This make the present invention being novel.

(E) RESULT

Since in above discussion, it is apparent that no prior art has the features of the present invention, especially in claim 1. Furthermore, as we know that no other prior art has features of the present invention. Thus, the present invention is novel and inventive.

If there is any error in the specification, or claims, applicant requests and authorizes Examiner to amend the claims, specification and drawings of the present invention so that they can match the requirement of U. S. Patent. Attentions of Examiner to this matter are greatly appreciated.

It is now believed that the subject Patent Application has been placed in condition for allowance, and such action is respectively requested.

Respectfully submitted.

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"MARK-UP" COPY OF THE AMENDED SPECIFICATION

PADLOCK

BACKGROUND OF THE INVENTION

1. Field of the Invention

This invention relates to a padlock, and particularly to one able to be assembled conveniently and quickly, having excellent effect of antitheft and greatly lowering producing cost. In using, only insert a key in the keyhole of a lock core and turn it around to rotate the rotary member of the lock core together with a stop block to let the engage groove of the stop block be disengaged from the annular groove of a movable bolt and make a spring extend ~~extended~~ elastically. At this time, the movable bolt is no longer held by the engage groove of the stop block so it can be drawn out of the movable bolt insert hole of an upper ~~fundamental~~ base. Then, a steel cable having one end secured in the upper ~~fundamental~~ base is wound around an article to be locked and the movable bolt is inserted through the movable bolt threading hole of an upper shell and positioned in the movable bolt insert hole of the upper ~~fundamental~~ base and the insert hole of a lower ~~fundamental~~ base. Simultaneously, the stop block is pulled and moved to its original position by the recovering resilience of the spring and has its engage groove engaged with the annular groove of the movable bolt to stably lock the movable bolt in a lock body, thus finishing locking of a padlock.

2. Description of the Prior Art

A conventional laminated lock 1, as shown in Fig. 1, includes a lock core body 10 made of a number of steel plates 100 piled up and combined together by rivets 101. The lock core body 10 has its left topside secured

with a stationary stud 11 having an insert hole 12 and its right topside bored with a deadlock hole 13. A steel cable 14 has one end inserted in the insert hole 12 of the stationary stud 11 and then the stationary stud 11 has its side wall compressed so as to squeeze and fix the end of the steel cable 14 therein, with the exterior of the steel cable 14 wrapped by a soft protective sleeve 15. The steel cable 14 has the other end secured with a movable deadbolt 16 having an annular engage groove 17 near the end and a spring 18 fitted thereon. In using, the deadlock 16 has its end inserted in the deadlock hole 13 of the lock core body 10, and a key is inserted in the keyhole of the lock core body 10 and turned around to rotate the lock core (not shown) together with the engage plates inside the lock core body 10 to lock the deadbolt 16, thus finishing locking of a conventional laminated lock. On the contrary, to unlock the laminated lock 1, just turn the key reversely to actuate the engage plates inside the lock core body 10 to release the deadbolt 16.

However, the lock core body 10 of a conventional laminated lock 1 is made by piling together a number of steel plates 100 with different shaped insert and through holes, and then these steel plates 100 are riveted together, taking too much time and labor in assembly. Especially, if any one of the steel plates 100 is arranged mistakenly during assembling, the steel plates 100 have to be disassembled one by one and rearranged, resulting in much delay in assembly and increasing its producing cost.

SUMMARY OF THE INVENTION

The objective of the invention is to offer a padlock, convenient to be assembled, able to lower producing cost and having excellent effect of antitheft.

The feature of the invention is an upper ~~fundamental~~ base having a recessed chamber formed in the interior and a cut surface defining one side of the recessed chamber and having a movable-bolt insert hole, the upper

~~fundamental~~ base further bored with a stationary-bolt insert hole. A lower ~~fundamental~~ base to be combined with the upper ~~fundamental~~ base is provided with a cut surface with an insert hole on the inner side and has a lock core accommodating chamber in the center and a through hole communicating with the lock core accommodating chamber. A lock core received in the lock core-accommodating chamber of the lower ~~fundamental~~ base has one end provided with a rotary member and the other end bored with a keyhole. A stop block to be received in the recessed chamber of the upper ~~fundamental~~ base is provided with an insert hole in the center and an engage groove at the right end, with the lower end of a spring hooked with the right end of the stop block and the upper end of the spring hooked with the upper ~~fundamental~~ base. A stationary bolt to be inserted in the stationary-bolt insert hole of the upper ~~fundamental~~ base is formed with an annular groove and an axial insert hole. A movable bolt is to be inserted in the movable-bolt insert hole of the upper ~~fundamental~~ base and the insert hole of the lower ~~fundamental~~ base, having an annular groove and an axial insert hole. An upper shell to be covered on the exterior of the upper ~~fundamental~~ base is provided with a stationary-bolt threading hole and a movable-bolt threading hole. A lower shell to be covered on the interior of the lower ~~fundamental~~ base and combined with the upper shell is bored with a through hole in the center.

BRIEF DESCRIPTION OF DRAWINGS

This invention will be better understood by referring to the accompanying drawings, wherein:

Fig. 1 is a perspective view of a conventional laminated lock;

Fig. 2 is an exploded perspective view of a padlock in the present invention;

Fig. 3 is a perspective view of the padlock in the present invention:

Fig. 4 is a cross-sectional view of the padlock in a locked condition in

the present invention; and,

Fig. 5 is a cross-sectional view of the padlock in an unlocked condition in the present invention.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

A preferred embodiment of a padlock in the present invention, as shown in Figs. 2 and 3, includes an upper ~~fundamental~~ base 2, a lower ~~fundamental~~ base 3, a lock core 4, a stop block 5, a stationary bolt 6, a movable bolt 7, an upper shell 8 and a lower shell 9 which are combined together.

The upper ~~fundamental~~ base 2 is formed with a recessed chamber 20 in an ~~the~~ interior thereof and a cut surface 21 defining one side of the recessed chamber 20 and provided with a movable-bolt inserting hole 22 and a horizontal projecting stud 23. Further, the upper ~~fundamental~~ base 2 is provided with a stationary-bolt inserting hole 24 in a left portion, a pinhole 25 in the left sidewall for a fixing pin 26 to be inserted therein and two positioning studs 27 on the front side.

The lower ~~fundamental~~ base 3 to be combined with the upper ~~fundamental~~ base 2 has a cut surface 30 formed on an ~~its~~ inner side thereof and bored with a lengthwise insert hole 31 and also having a lengthwise lock core accommodating chamber 32 in a ~~its~~ center thereof. Further, the lower ~~fundamental~~ base 3 is bored with a through hole 33 communicating with the lock core accommodating chamber 32 and two stud holes 34 in the inner side.

The lock core 4 to be received in the lock core-accommodating chamber 32 of the lower ~~fundamental~~ base 3 has one end provided with a rotary member 40 and the other end formed with a keyhole 41.

The stop block 5 to be received in the recessed chamber 20 of the upper ~~fundamental~~ base 2 has its central part bored with an insert hole 50 and its right end provided with a horizontal projecting stud 51 and an

engage groove 52, with one end of a spring 53 hooked with the projecting stud 51.

The stationary bolt 6 to be inserted and fixed in the stationary-bolt inserting hole 24 of the upper ~~fundamental~~ base 2 is formed with an annular groove 60 and an axial insert hole 61.

The movable bolt 7 is to be inserted in the movable-bolt inserting hole 22 of the upper ~~fundamental~~ base 2 and the insert hole 31 of the lower ~~fundamental~~ base 3, having an annular groove 70 and an axial insert hole 71.

The upper shell 8 to be covered on an ~~its~~ exterior of the upper ~~fundamental~~ base 2 is bored with a stationary-bolt insert hole 80 and a movable-bolt insert hole 81.

The lower shell 9 to be covered on the exterior of the lower ~~fundamental~~ base 3 and combined with the upper shell 8 is bored with a through hole 90 in the center.

In assembling, as shown in Figs. 2, 3 and 4, firstly, insert one end of a steel cable 19 in the axial insert hole 61 of the stationary bolt 6 and compress the inner wall of the annular groove 60 of the stationary bolt 6 to squeeze and fix the end of the steel cable 19 therein and then insert the other end of the steel cable 19 in the axial insert hole 71 of the movable bolt 7 and compress the inner wall of the annular groove 70 of the movable bolt 7 to squeeze and fix the end of the steel cable 19 therein. Then, the stationary bolt 6 is inserted through the stationary-bolt threading hole 80 of the upper shell 8 and positioned in the stationary-bolt insert hole 24 of the upper ~~fundamental~~ base 2 and fixed therein by a fixing pin 26 inserted through the pin hole 25 of the upper ~~fundamental~~ base 2 and engaged in the annular groove 60 of the stationary bolt 6.

Next, the stop block 5 is received in the recessed chamber 20 and has its right end positioned on the cut surface 21 of the upper ~~fundamental~~ base

2, and the spring 53 has its lower end fitted on the projecting stud 51 of the stop block 5 and its upper end fitted on the projecting stud 23 of the upper ~~fundamental~~ base 2, letting the engage groove 52 of the stop block 5 be aligned to the movable-bolt insert hole 22 of the upper ~~fundamental~~ base 2. Subsequently, the lock core 4 is fitted in the lock core accommodating chamber 32 of the lower ~~fundamental~~ base 3, and the upper ~~fundamental~~ base 2 and the lower ~~fundamental~~ base 3 are combined together, letting the positioning studs 27 of the upper ~~fundamental~~ base 2 be inserted in the stud holes 34 of the lower ~~fundamental~~ base 3. Afterward, the rotary member 40 of the lock core 4 is inserted in the insert hole 50 of the stop block 5, and the upper shell 8 is covered on the exterior of the upper ~~fundamental~~ base 2 and the lower shell 9 is covered on the exterior of the lower ~~fundamental~~ base 3.

Lastly, the upper shell 8 and the lower shell 9 are combined and welded together and their exteriors are ~~exterior is~~ enveloped with a wrapping material to complete a padlock body. Then, the movable bolt 7 is inserted through the movable-bolt threading hole 81 of the upper shell 8 and positioned in the movable-bolt insert hole 22 of the upper ~~fundamental~~ base 2 and the insert hole 31 of the lower ~~fundamental~~ base 3 to finish assembly of the padlock.

In using, as shown in Figs. 4 and 5, a key is inserted in the keyhole 41 of the lock core 4 and turned around to rotate the rotary member 40 of the lock core 4 together with the stop block 5 to disengage the engage groove 52 of the stop block 5 from the annular groove 70 of the movable bolt 7 and make the spring 53 extended elastically, letting the movable bolt 7 no longer be held by the engage groove 52 of the stop block 5, and at this time the movable bolt 7 can be drawn out of the movable-bolt insert hole 22 of the upper ~~fundamental~~ base 2. Then, the steel cable 19 is wound around an article to be locked and the movable bolt 7 is inserted through the movable-

bolt threading hole 81 of the upper shell 8 and positioned in the movable-bolt insert hole 22 of the upper ~~fundamental~~ base 2 and the insert hole 31 of the lower ~~fundamental~~ base 3.

When the movable bolt 7 passes through the movable-bolt insert hole 22 of the upper ~~fundamental~~ base 2 to be inserted in the insert hole 31 of the lower ~~fundamental~~ base 3, its end will push the stop block 5 downward to let the end of the stop block 5 be turned and disengaged from the movable-bolt insert hole 22 of the upper ~~fundamental~~ base 2 and the spring will be elastically pulled and extended. After the movable bolt 7 has its end inserted and positioned in the insert hole 31 of the lower ~~fundamental~~ base 3, the annular groove 70 of the movable bolt 7 is positioned in the engage groove 52 of the stop block 5 and the end of the stop block 5 is no longer pushed by the end of the movable bolt 7. Therefore, the stop block 5 is pulled and moved to its original position by the recovering resilience of the spring 53 and its engage groove 52 is fixedly engaged with the annular groove 70 of the movable bolt 7, letting the movable bolt 7 be locked stably in the lock body to finish locking of the padlock.

To unlock the padlock, as shown in Fig. 5, only insert a key in the keyhole 41 of the lock core 4 and turn it around to rotate the rotary member 40 of the lock core 4 together with the stop block 5 to disengage the engage groove 52 of the stop block 5 from the annular groove 70 of the movable bolt 7 and make the spring 53 extended elastically. Thus, the movable bolt 7 is no longer held by the engage groove 52 of the stop block 5 so it can be drawn out of the movable-bolt insert hole 22 of the upper ~~fundamental~~ base 2 to finish unlocking of the padlock.

As can be noted from the above description, this invention has the following advantages.

1. It is convenient in operating and using.

2. It can be assembled conveniently and quickly, able to lower its

producing cost.

3. The movable bolt in this invention can be locked stably, having excellent effect of antitheft.

While the preferred embodiment of the invention has been described above, it will be recognized and understood that various modifications may be made therein the appended claims are intended to cover all such modifications that may fall within the spirit and scope of the invention.

ABSTRACT OF THE INVENTION

A padlock is locked by inserting a key into the keyhole and turned to rotate the rotary member of a lock core together with a stop block to let the engage groove of the stop block be disengaged from the annular groove of a movable bolt and make a spring extend outward, and thus the movable bolt can be drawn out of the movable- bolt insert hole of an upper ~~fundamental~~ base. Then, the steel cable of the padlock is wound around an article to be locked, and the movable bolt is inserted in the movable-bolt insert hole of an ~~the~~ upper ~~fundamental~~ base and the insert hole of a lower ~~fundamental~~ base. Meanwhile, the stop block is moved to its original position by the spring and its engage groove is engaged with the annular groove of the movable bolt, letting the movable bolt be locked stably.